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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/663,872	09/15/2000	J Michael Sanchez	D/A0664	4185

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EXAMINER

BAREFORD, KATHERINE A

ART UNIT	PAPER NUMBER
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1762

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DATE MAILED: 10/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/663,872

Applicant(s)

SANCHEZ ET AL

Examiner

Katherine A. Bareford

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawasaki et al (US 5576075).

Claim 21: Kawasaki teaches an ultrasonicator is provided to ultrasonicate a stream of liquid dispersion of primary particles. Column 4, lines 30-50. The ultrasonicator would be able to treat agglomerated or unagglomerated particles, as the specific makeup of the dispersion is not part of the apparatus. A filter member is provided to filter the resulting ultrasonicate stream containing a dispersion of de-agglomerated primary particles. Column 6, lines 35-55.

Claim 22: a coater is provided to coat the filtered stream onto a receiver. Column 2, lines 35-55, column 20, lines 40-55 and figure 3.

Claim 23: the coated receiver is substantially free of agglomerated primary particles. Column 1, lines 5-20 and column 36, lines 1-10.

3. Claims 1, 2, 11 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Min et al (US 4112549).

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Min teaches a process for sonicating a stream containing a dispersion of agglomerated primary particles. Column 2, line 50 through column 3, line 10. The sonicated stream is further filtered. Column 4, lines 20-30. The stream includes a gas carrier, air. Column 3, lines 30-35.

Claim 2: the resulting stream is coated onto a receiver surface. Column 4, lines 20-40 and column 1, lines 5-15.

Claim 11: The stream includes a gas carrier, air. Column 3, lines 30-35.

Claim 14: the de-agglomerated particles are separated from the stream after applying to the forming means. Column 4, lines 20-40.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2, 5-6, 8-10, 12-19 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki et al (US 5576075).

Kawasaki teaches a method and apparatus for sonicating, filtering and coating. Column 1, lines 5-15 and column 6, lines 35-55. A stream containing a dispersion is subjected to a sonicating treatment. Column 2, lines 35-55. The dispersion contains primary particles.

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Column 1, lines 20-25 and column 6, lines 35-55. The resulting sonicated stream containing a dispersion comprised of de-agglomerated primary particles is then filtered. Column 6, lines 35-55.

Claim 2: the filtered and sonicated stream is then coated onto a receiver surface. Column 2, lines 45-55.

Claim 5: the primary particles are present in the stream in an amount that is between 0-60 wt% based on the total weight of the stream. See, for example, column 21, line 50 through column 22, line 25.

Claim 6: the de-agglomerated particles have a volume average diameter than is between 0.005 and 20 micrometers. See, for example, column 21, line 50 through column 22, line 25 (the diameter of the ferromagnetic particles is 0.08 micrometers, and the thickness of the provided coating is 1.5 micrometers).

Claim 10: the carrier for the stream includes a continuous phase liquid solvent. See, for example, column 21, line 50 through column 22, line 25 and column 15, line 55 through column 16, line 5.

Claim 12: the sonication is accomplished with at least one ultrasonic member. Column 4, lines 30-50 and column 6, lines 35-55.

Claim 13: the ultrasonic member is between 1 and 10 ultrasonic horns. Column 4, lines 30-50 and column 6, lines 35-55.

Claim 14: the de-agglomerated primary particles are further separated from the stream. (note the drying of the solvent after coating). See column 22, lines 15-25.

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Claim 17: the re-agglomeration of the de-agglomerated primary particles can occur.

Column 8, lines 1-20.

Claim 19: the stream can further comprise a surfactant. Column 17, line 45 through column 18, line 15.

Kawasaki teaches all the features of these claims except (1) that the particles are agglomerated before being sonicated, (2) that the filtering removes objectionable contaminants and its size (claims 8,9), (3) sonicating the filter media and when (claim 15, 24, 25), (4) the stream pressure measurement (claim 16), and (5) analyzing the sonicated stream (claim 18).

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kawasaki to provide the missing features of these claims in order to provide a desirable coated surface. Specifically, it would have been obvious to (1) modify Kawasaki to provide that the initial dispersion to be sonicated contains agglomerated particles with the expectation of achieving a desirable de-agglomerated coating material, because Kawasaki teaches that the dispersion as initially provided is readily susceptible to agglomeration (see column 1, lines 20-25 and 45-55) and Kawasaki provides no limitation on how long the dispersion can be made before sonication treatment must be carried out, while providing specific times for when the treatment must be provided once sonication starts (see column 5, line 60 through column 6, line 30). (2) it would further have been obvious to modify Kawasaki to provide that the filtering removes objectionable contaminants of a size larger than the de-agglomerated particles with an expectation of desirable coating results, because Kawasaki teaches filtering the sonicated dispersion, and filtering by its very nature removes contaminants, and it would further be

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expected that the contaminants would be larger than the de-agglomerated particles, because the filter must allow particles the size of the de-agglomerated particles to pass through. (3) it would further have been obvious to modify Kawasaki to provide sonicating at the filter media during or before coating with the expectation of providing a desirable coating, because Kawasaki teaches multiple sonicating steps, one of which could efficiently be done at the filtering step, and that this can occur before coating starts, since an initial coating must be provided before coating commences. (4) it would further have been obvious to modify Kawasaki to provide analyzing stream pressure before filtering with the expectation of providing a desirable coating, because Kawasaki teaches filtering the stream, and it is conventionally known in the art of filtering that stream pressure affects the results of filtering. (5) it would further have been obvious to modify Kawasaki to provide analyzing the sonicated stream for various undesirable particles with the expectation of providing a desirable coating, because Kawasaki teaches sonicating, and further provides examples of numerous analytical experiments on the stream so as to provide the optimum coating (see the examples).

6. Claims 3, 4, 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki as applied to claims 1-2, 5-6, 8-10, 12-19 and 24-25 above, and further in view of Hochberg (US 3890240).

Kawasaki teaches all the features of these claims except (1) the coated photoreceptor surface (claim 3), (2) the primary particles as toner (claims 4, 7), (3) the photosensitive particles

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(claim 20). Kawasaki does teach that the surface can be coated before the application of the filtered sonicated coating material. See column 2, lines 45-50.

Hochberg teaches a process for providing liquid dispersions of toner materials to be applied to a surface. Column 1, lines 5-15. The toner is in the form of particles including carbon black and a dye or pigment. Column 1, lines 55-68. The particles have a tendency to agglomerate, and it is necessary to control this agglomeration to provide desirable coating. Column 3, lines 15-35. As a way for dispersing the particles, Hochberg teaches high frequency, ultrasonic agitation. See column 20, lines 1-55. As taught, the particles would be photosensitive. See column 1, lines 5-30. The toner is applied to a charged photoconductive layer. See column 1, lines 15-30.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kawasaki to use the sonicating process to also sonicate toner particles in dispersion as suggested by Hochberg with an expectation of desirable coating results, because Kawasaki teaches a desirable sonication process to provide dispersed particles, and Hochberg teaches that it is desirable to sonicate toner particles in liquid to provide a desirable dispersed dispersion. It would further have been obvious to provide resin with the particles so as to provide a desirable coating, given the teaching of Hochberg of using resin in the toner dispersion (see column 1, lines 60-65). It would further have been obvious to modify Kawasaki in view of Hochberg to provide a coating photoreceptor substrate so as to provide a desirable coating, given the teaching of Hochberg of the desirability of coating of the toner particles to such a substrate (see column 1, lines 15-30).

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7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki as applied to claims 1-2, 5-6, 8-10, 12-19 and 24-25 above, and further in view of Min et al (US 4112549).

Kawasaki teaches all the features of these claims except the gas carrier vehicle.

Min teaches a process for sonicating a stream containing a dispersion of agglomerated primary particles. Column 2, line 50 through column 3, line 10. The sonicated stream is further filtered. Column 4, lines 20-30. The stream includes a gas carrier, air. Column 3, lines 30-35.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kawasaki to use the sonicating process to also sonicate particles in dispersion in a gas stream as suggested by Min with an expectation of desirable coating results, because Kawasaki teaches a desirable sonication process to provide dispersed particles, and Min teaches that it is desirable to sonicate suspended in air as well as liquid.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (703) 308-0078. The examiner can normally be reached on M-F(7:00-4:30) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (703) 308-2333. The fax phone numbers for the

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- organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


KATHERINE A. BAREFORD
PRIMARY EXAMINER
GROUP-1100-1700